NUCLEAR OPERATOR

THE MOST ADVANCED TECHNICAL TRAINING IN THE MILITARY

NAVY BY THE NUMBERS

OVER
330K ACTIVE DUTY SAILORS

OVER
130 ESSENTIAL JOB FIELDS
(HEALTH CARE, ELECTRONICS, NUCLEAR ENGINEERING, AVIATION AND MORE)

MORE THAN **100** PORTS OF CALL

289 DEPLOYABLE BATTLE FORCE SHIPS

WHAT YOU'LL SEE

- Why Nuclear Power
- Nuclear Power Program
- Training
- Benefits
- Ways to Join
- Questions

WHY NUCLEAR?

EXTREMELY LOW CARBON FOOTPRINT

LOW FUEL COSTS

MOST STABLE SOURCE OF POWER

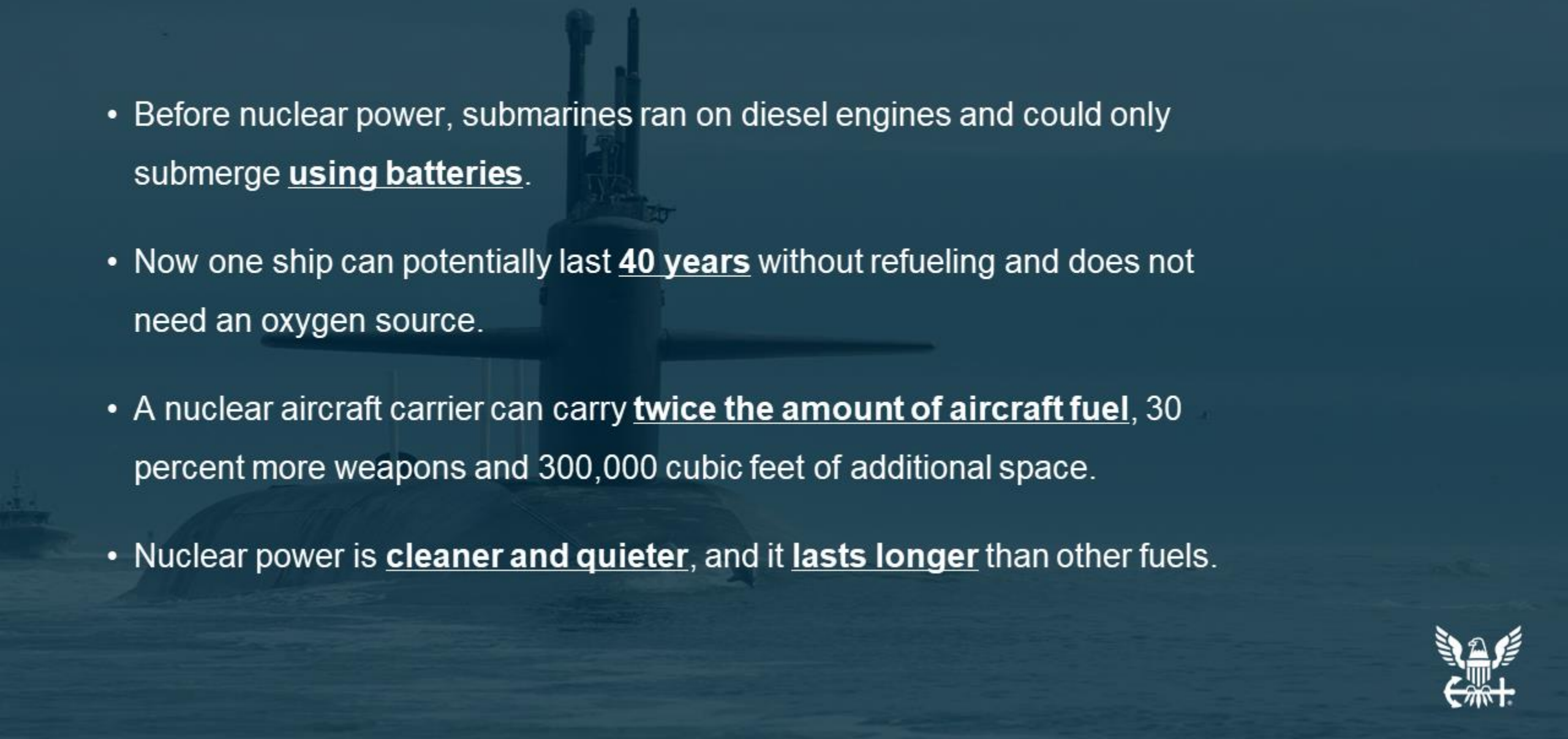
HIGHEST ENERGY DENSITY OF ALL PRACTICAL FUEL SOURCES

NUCLEAR FUEL

A single uranium fuel pellet contains the energy equivalent of:

- 149 GALLONS OF OIL
- ONE TON OF COAL
- 17,000 FEET OF NATURAL GAS

WHY BUILD A NUCLEAR NAVY?



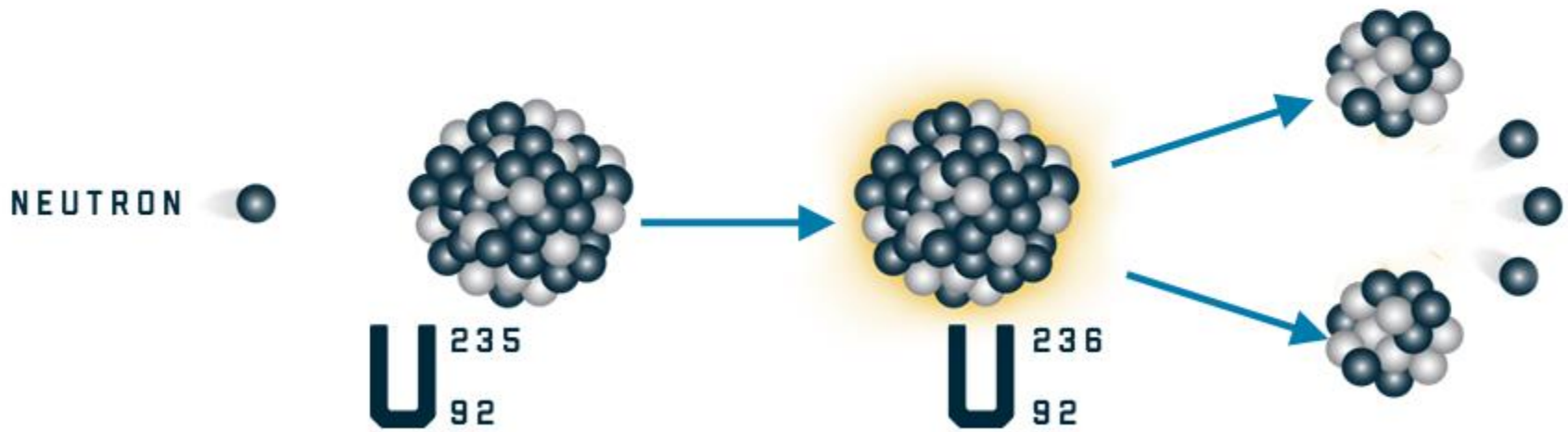
- Before nuclear power, submarines ran on diesel engines and could only submerge **using batteries**.
- Now one ship can potentially last **40 years** without refueling and does not need an oxygen source.
- A nuclear aircraft carrier can carry **twice the amount of aircraft fuel**, 30 percent more weapons and 300,000 cubic feet of additional space.
- Nuclear power is **cleaner and quieter**, and it **lasts longer** than other fuels.

4 STEPS TO NUCLEAR FISSION

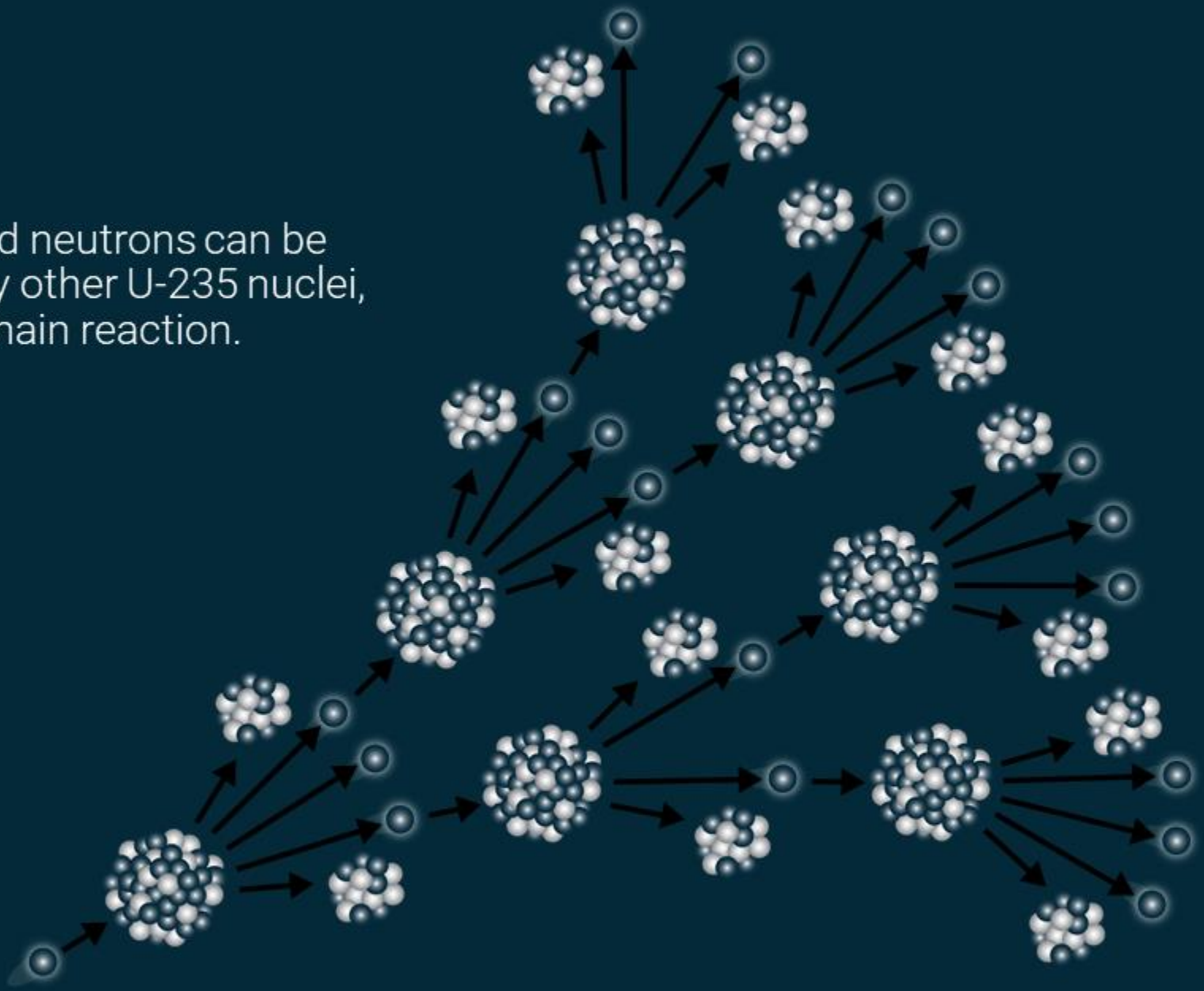
STEP 1: A uranium-235 (U-235) nucleus absorbs an extra, slow-moving neutron. (Fast neutrons will not be captured.)

STEP 2: The nucleus becomes uranium-236, which is highly unstable.

STEP 3: The nucleus splits into two "fission products," releasing a significant amount of energy as well as 2–3 neutrons.



STEP 4: The released neutrons can be absorbed by other U-235 nuclei, causing a chain reaction.



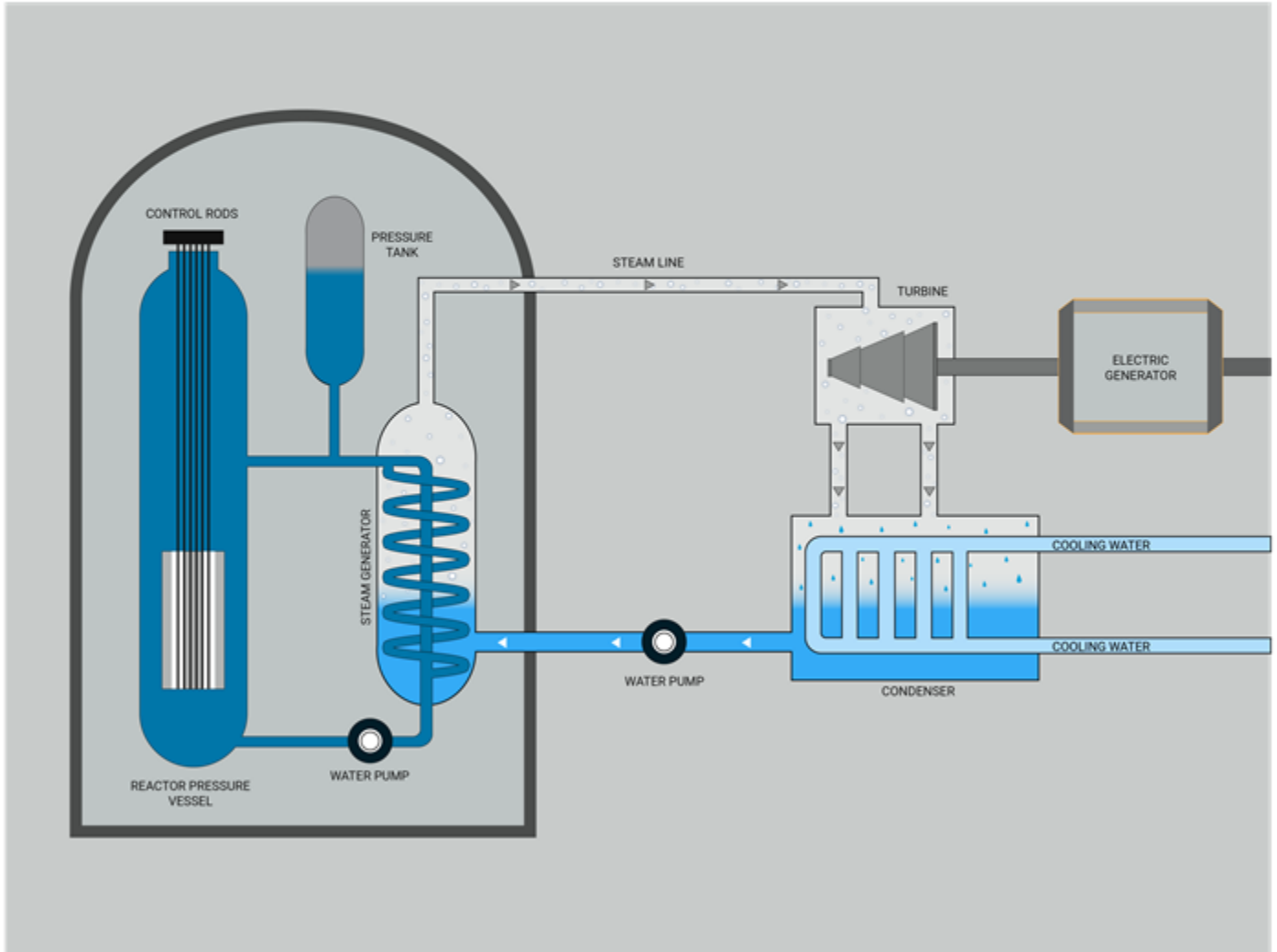
4 STEPS TO NUCLEAR POWER

1. NUCLEAR FISSION HEATS WATER INSIDE THE REACTOR VESSEL.

2. NUCLEAR FISSION HEATS WATER INSIDE THE REACTOR VESSEL.

3. THE HEAT VAPORIZES WATER IN A SECONDARY LOOP, MAKING STEAM.

4. THE STEAM PASSES THROUGH THE MAIN TURBINE, WHICH GENERATES ELECTRICITY AND PROPULSION.



NAVY NUCLEAR POWER PROGRAM

- One of the **oldest and largest** nuclear organizations in the world with **the best safety record** of any industry
- **Most advanced program**, filled with the nation's best and brightest trained to operate power plants on nuclear-powered Navy vessels
- Since 1954, the Navy has sailed over **139 million miles** and operated **103 reactors** on 80 vessels **without a single** nuclear accident

SURFACE

- 400+ NUCLEAR RATINGS ON BOARD TO MANAGE 2 INDEPENDENT POWER PLANTS
- MOST PROTECTED SHIP IN THE FLEET
- CAN HOUSE UP TO 75 AIRCRAFT

SUBMARINE

- 125+ PEOPLE ON BOARD THE SUBMARINE
- PERFORM HIGHLY-CLASSIFIED MISSIONS
- 68 SUBMARINES IN THE FLEET

NAVAL NUCLEAR BASES

MACHINIST MATE

- Operate and maintain machinery within Naval nuclear propulsion plants and associated equipment
- Supervise and administer plant operations
- Repair systems associated with reactor plants, propulsion plants and auxiliary support systems

ELECTRICIANS MATE

- Operate electrical power generation systems, lighting systems, electrical equipment and electrical appliances
- Installation, operation, adjustment, routine maintenance, inspection, test and repair of electrical equipment
- Maintenance and repair of related electronic equipment

ELECTRONICS TECHNICIAN

- Operate, maintain, repair, calibrate and adjust reactor safety electronic equipment
- Maintain reactor plant performance records

"A" SCHOOL

- Located in Charleston, SC
- Duration: 3-6 months
- Curriculum: Electronic, Electrical, and Mechanical Fundamentals

NAVAL NUCLEAR POWER SCHOOL

- Located in Charleston, SC
- Duration: 6 months
- Curriculum: Math, Physics, and Reactor Plant Design and Operation

NUCLEAR POWER TRAINING UNIT

- Located in Charleston, SC, and Ballston Spa, NY
- Duration: 6 months
- Curriculum: Prototype training on a real-life operational nuclear platform

BENEFITS

- **Up to $40,000 signing bonus**
- **Up to $100,000 reenlistment signing bonus** (eligible after 2 years of service)
- Enlist as an E-3 (**two pay grades** higher than general enlistee)
- Tuition assistance
- Forever GI Bill = **3 years' full tuition** and housing
- Licensing and certifications **paid**
- Opportunity to earn **college credits** toward a degree

COLLEGE CREDITS

- Tuition assistance **during and after** your time in the Navy
- Earn **70+ credit hours**
- Receive a paycheck while in school

SUMMARY OF EARNED CREDITS

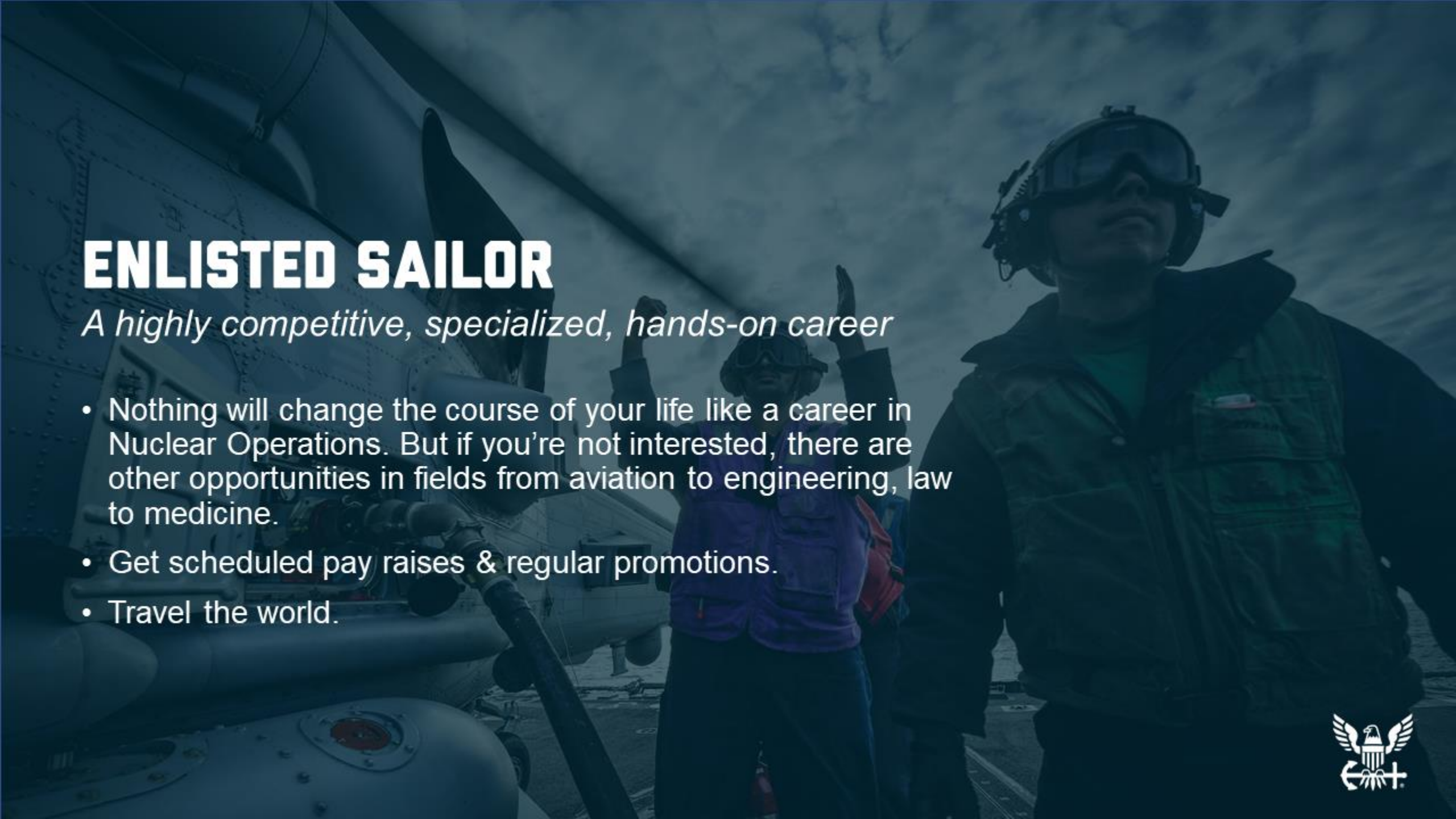
ELECTRONICS TECHNICIAN, NUCLEAR (ETN)

TITLE/SUBJECT	CREDIT HOURS
First Aid and Safety	2
Personal Fitness/Conditioning	1
Personal/Community Health	1
AC Circuits	2
Atomic and Nuclear Physics	1
DC Circuits	2
Digital Principles	2
Electric Machines	2
General Chemistry and Principles of Materials	3
General Physics	5
Heat Transfer and Fluid Flow	3
Hydraulic Systems	2
Nuclear Reactor Engineering	3
Radiation Protection Technology	1
Technical Mathematics	4
Digital Circuits	3
Electric Circuits (AC/DC)	3
Electronic Circuits	4
Electronic Systems Troubleshooting and Maintenance	5
Electronics Laboratory Test Equipment	2
Field Experience in Management	3
Maintenance Management	3
Microcomputer Applications Software	2
Microprocessors	3
Navigation Equipment	3
Personnel Supervision	3
Project Management	3
Radar Systems Maintenance	3
Technical Mathematics	3
Technical Writing	3
TOTAL CREDITS EARNED	80

BEYOND THE NAVY

- Average starting salary range of **$90,000–$150,000**
- Numerous civilian career options
- Opportunities within the industry-leading technology and engineering spaces

HOW TO JOIN



ENLISTED SAILOR

A highly competitive, specialized, hands-on career

- Nothing will change the course of your life like a career in Nuclear Operations. But if you're not interested, there are other opportunities in fields from aviation to engineering, law to medicine.
- Get scheduled pay raises & regular promotions.
- Travel the world.


QUESTIONS?
AMERICA'S
NAVY
FORGED BY THE SEA